

6201

Model: HD2

Electric Stimulator TENS + EMS



Instruction Manual



HD2 is an advanced, professional model; consulting with a medical professional before use is recommended.

HIVOX®

Introduction

GB

Dear user, thank you for choosing Hivox's TENS & EMS HD2 Electric Stimulator. Please read the manual carefully to learn the correct operation of this equipment. Understanding the operation will enable you to discover and enjoy the benefits of HD2 for a long time.

HIVOX HD2 is a TENS & EMS combined unit, offering you two independent channels with four electrode pads. It is innovative, featuring widely applicable functions for various wellness-improving purposes: relieving pain, maintaining physical fitness, revitalizing muscle, and alleviating fatigue. Its diverse built-in programs can conveniently match your individual, specific needs. All programs come with default settings that can be used directly; also, customized settings are conveniently available through short-cut keys, even during treatment/stimulation. You will find HD2, despite its diverse, powerful functions, very easy to use; in just a few minutes, you can navigate the unit without much help from this user manual.

What is TENS used for?

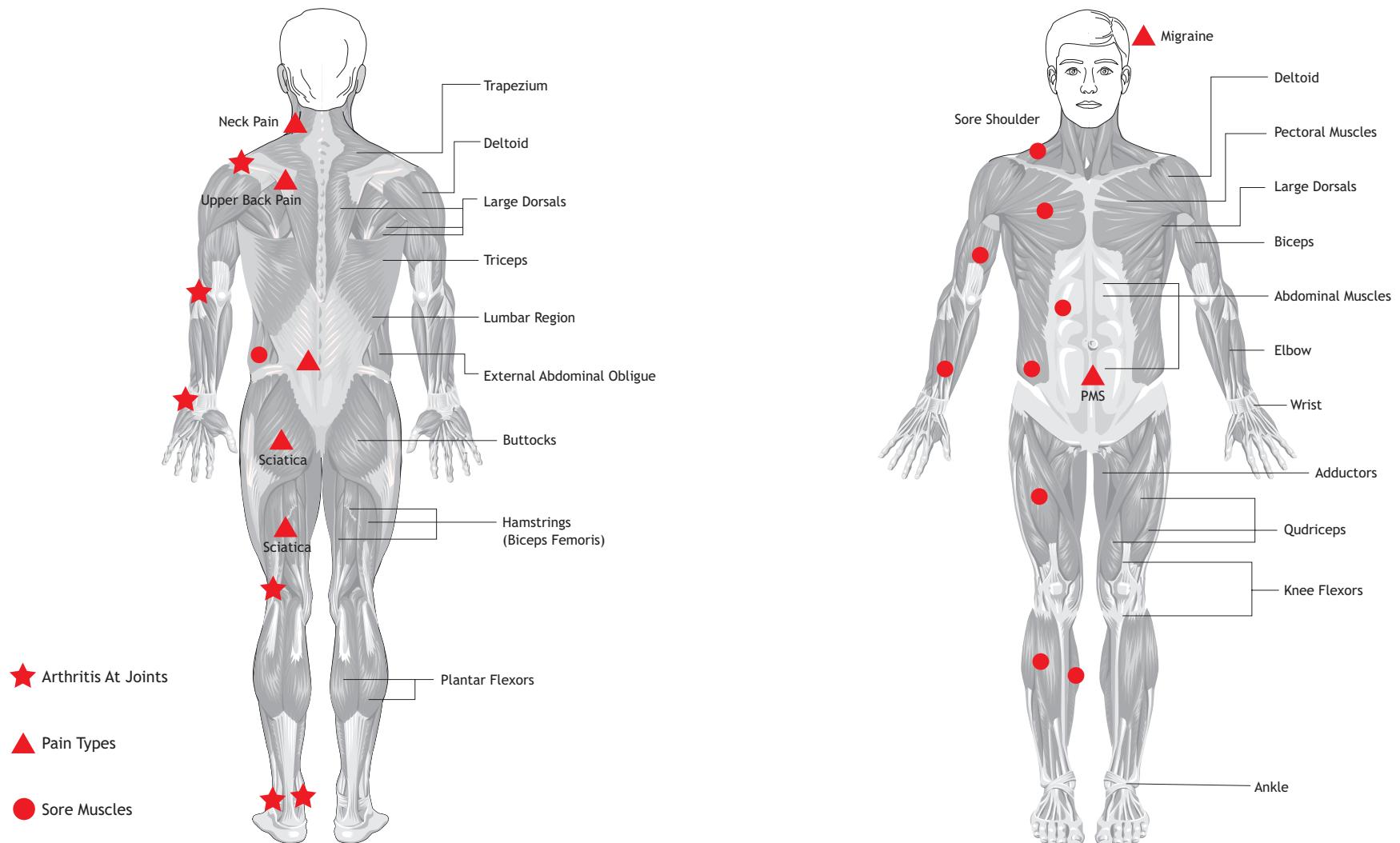
TENS, Transcutaneous Electrical Nerve Stimulation, has been clinically approved as an effective, drug-free, side-effect-free treatment of relieving physical pains. TENS units emit controlled micro electric currents called impulses through skin to interact with nerves/ acupuncture points and relieve pains in mainly four categories: (1) chronic-illness-caused, (2) post-operation-caused, (3) sport-injury-caused, and (4) female-nature-related. The pain relieving/distracting effect comes from two ways: (1) to block the nerve pathway transmitting pain signals and (2) to stimulate the brain to release natural pain killer endorphin. Overall, high frequency pulses are effective in blocking the nerve pathway and low frequency pulses effective in inducing the secretion of endorphin.

What is EMS used for?

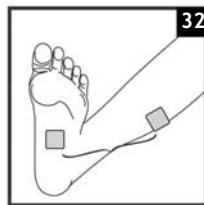
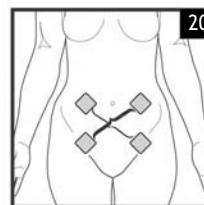
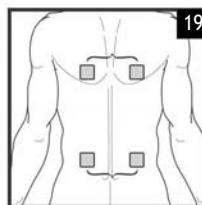
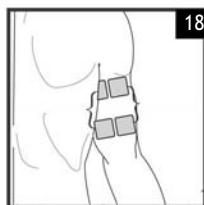
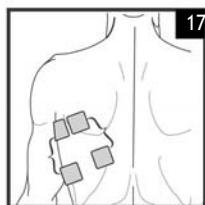
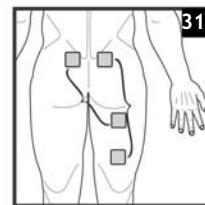
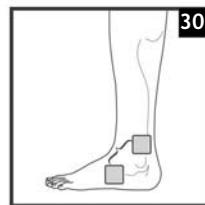
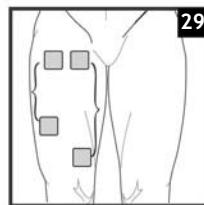
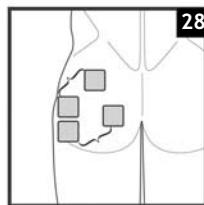
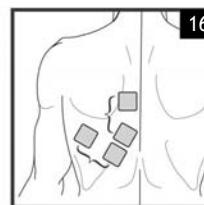
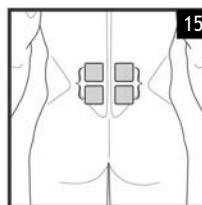
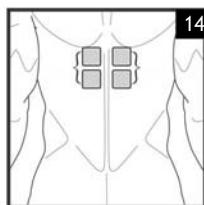
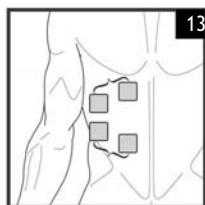
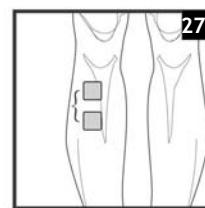
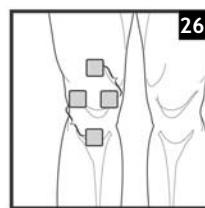
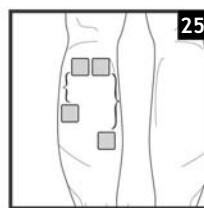
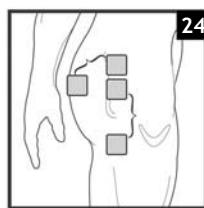
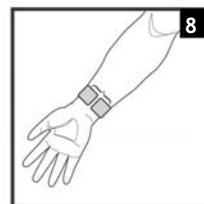
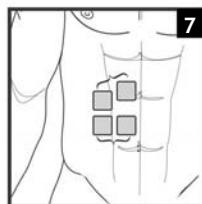
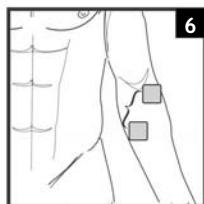
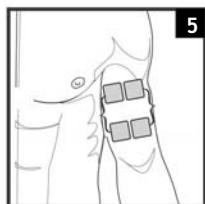
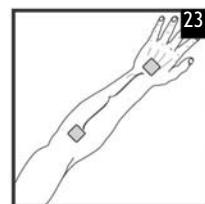
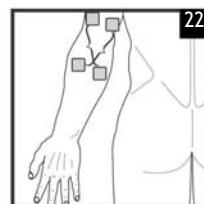
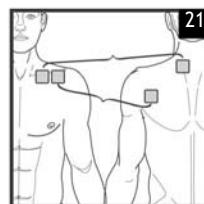
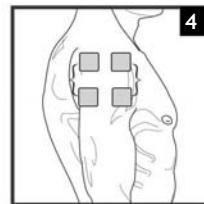
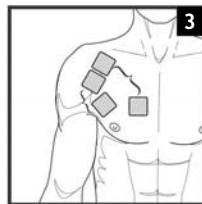
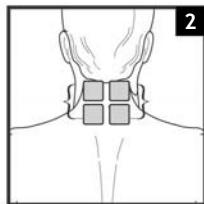
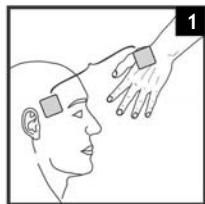
EMS, Electrical Muscle Stimulation/Neuromuscular Muscle Stimulation, has also been widely applied for improving one's well-being: sport, rehabilitation, anti-stress, cell revitalization...etc. The enclosed program charts (Page I-III) can easily help you to find appropriate programs for your needs. Besides, the featuring Masseur Touch Technology embedded is able to deliver human massaging comfort to relieve muscle stiffness and fatigue. Moreover, customized settings are only few keystrokes away for matching your individual characteristics.

For more information about Hivox TENS & EMS HD series, please visit our website at <http://www.hivox-biotek.com/eng-pro-islim.htm> or contact our customer service for further assistance.

Illustrations of Muscle & Pain



Illustrations of Pad Positions & Combinations



Note: Pads linked by a bracket are to be connected to the same color-coded wires.

TENS PROGRAMS

Prog. No.	Reasonable areas of application Indications	Possible electrode position	Cycle 1			Cycle 2			Cycle 3			Cycle 4		
			Width (μs)	On Off Time (sec.)	Frequency (Hz)									
1 + 11	Neck pain, tension headache	02, 05	250	4	30	0	250	4	30	0	250	5	30	0
2 + 12	Back pain	10, 11, 12, 13, 14, 19	250	6	20	0	250	6	20	0	250	8	30	0
3 + 13	Shoulder pain	04, 09, 21	250	2	10	0	250	4	8	0	250	6	20	0
4 + 14	Pain as a result of rheumatoid arthritis	See note	250	60	20	0	250	70	20	0	250	80	30	0
5 + 15	Lumbar pain	05	250	80	20	0	250	80	20	0	250	75	4	0
6 + 16	Menstrual pain	20	250	70	4	0	250	65	4	0	250	55	30	0
7 + 17	Pain programme I	See note	250	40	30	0	250	45	30	0	250	55	30	0
8 + 18	Knee pain Ankle joint pain, capsular injuries	26, 30	250	40	5	0	250	6	10	0	250	50	5	0
9 + 19	Pain programme II (Burst)	See note	250	75	0,25	250	2	0,5	0	250	6	30	0	250
10 + 20	Pain programme III (Burst)	See note	250	100	0,25	0,25								

On-Time (sec.) = Cycle switch-on time in seconds (contraction) - Off-Time (sec.) = Cycle switch-off time in seconds (relaxation)

Note: Electrode position is supposed to surround the painful area. With painful muscle groups, the electrodes are grouped round the muscle affected. In case of joint pain, the joint on the front/rear side of the joint and, if electrode distances permit, on the right and left sides of the joint, should be surrounded with electrodes.

Minimal electrode distance should not be less than 5 cm and not exceed 15 cm. See figure no. 26, 27 and 30 for knee and ankle joint.

Burst programmes are suitable for all sites which should be treated with an alternating signal pattern (to ensure minimum habituation).

III-1

EMS PROGRAMS

Prog. No.	Reasonable areas of application Indications	Possible electrode position	Cycle 1			Cycle 2			Cycle 3			Cycle 4		
			Width (μs)	On Off Time (sec.)	Frequency (Hz)									
1 + 11	Shoulder muscles	04, 09, 21	250	30	5	1	250	10	15	1	250	50	5	1
2 + 12	Middle and lower trapezius muscle, latissimus dorsi muscle, neck muscles	02, 09, 10, 11 12, 16, 17	250	4	30	1	250	4	20	1	250	5	30	1
3 + 13	Back musculature near spinal column, Prog. I	14, 15, 19	250	2	10	1	250	4	10	1	250	6	10	1
4 + 14	Front and back upper arm musculature (including biceps), front and back lower arm musculature	05, 06, 18, 22	250	4	30	1	250	4	30	1	250	4	30	1
5 + 15	Straight and transverse abdominal musculature	07	250	6	15	1	250	8	15	1	250	10	15	1
6 + 16	Back musculature near spinal column, Prog. II	14, 15, 19	250	2	20	1	250	2	20	1	250	1	30	1
7 + 17	Back musculature near spinal column, Prog. III	14, 15, 19	250	4	30	1	250	4	20	1	250	6	30	1
8 + 18	Posterior musculature	28	250	8	30	1	250	8	20	1	250	6	30	5
9 + 19	Front and back upper thigh musculature	29	250	20	5	1	250	6	8	1	250	25	5	1
10 + 20	Front and back lower thigh musculature	25, 27	250	5	1	250	6	8	1	250	35	5	1	

On-Time (sec.) = Cycle switch-on time in seconds (contraction) - Off-Time (sec.) = Cycle switch-off time in seconds (relaxation)

III-2

MESSAGE PROGRAMS

Prog. No.	Stimulation Type	Cycle 1				Cycle 2				Cycle 3				Cycle 4			
		Cycle 5		Cycle 6		Cycle 7		Cycle 8		Cycle 9		Cycle 10		Cycle 11		Cycle 12	
		Width (1s)	Rate (Hz)	On Time Sec.	Off Time Sec.	Width (1s)	Rate (Hz)	On Time Sec.	Off Time Sec.	Width (1s)	Rate (Hz)	On Time Sec.	Off Time Sec.	Width (1s)	Rate (Hz)	On Time Sec.	Off Time Sec.
1	Tap and grasp massage	250	8	60		250	60	250	60	250	15	60		250	60	250	250
2	Knead and grasp massage	250	110	60		250	70	250	80	250	250	250	90	250	60	250	250
3	Tap massage	250	5	15	0	250	10	15	0	250	15	15	0	250	30	20	20-80-20Hz
4	Side of hand/pressing massage	250	20	5	0	250	30	5	0	250	40	5	0	250	50	5	0
5	Side of hand/pressing massage	250	20	60	0	250	75	5	0	250	90	5	0	250	110	5	0
6	Vibratory massage	250	60	60	0	250	30	60	0	250	40	60	0	250	50	60	0
7	Tap massage (switch between electrodes)	250	6			200	8	30	0					250	110	60	0
8	Massage jet (switch between electrodes)	250	25														
9	Pressure massage jet (switch between electrodes)	250	80														
10	Combination programme (switch between electrodes)	250	100														

1. Dangers, Warnings & Cautions!!!



Do Not Use HD2 With Following Conditions:

- More than 3 months into pregnancy
- Metal plates or pace maker implanted
- Epileptic
- Diabetic
- Malignant tumor diagnosed
- High fever
- Abnormal high blood pressure



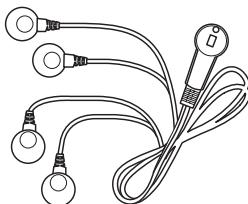
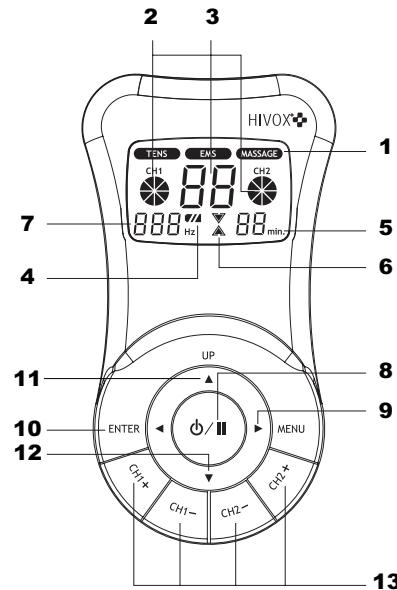
• Warnings

1. Do not use this unit near the heart, around the mouth, or on diseased skin.
2. Do not use this unit in places with high humidity such as the bathroom.
3. May need to use under the supervision of a physical therapist.
4. For external use only.
5. Long-term stimulation at the same electrode site may cause skin discomfort. Consult a dermatologist if skin discomfort persists.
6. Consult a doctor before you use this TENS & EMS device if you receive other medical treatments.
7. Do not disassemble or remodel this unit.
8. Consult your local authorities for proper battery disposal.
9. Supervision and medical consultancy recommended if you are under age 16.

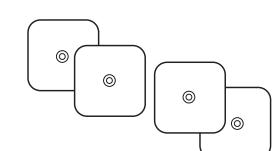
• Cautions

1. If the unit is not functioning properly or causes discomfort, stop using.
2. If you want to move the electrode pads to other regions of your body, make sure the unit is paused.
3. Do not attach the pads to other people during stimulation/treatment.
4. Use only for the specific pain problem diagnosed by the physician.
5. Do not use this unit while sleeping or driving.
6. Be careful not to allow any metal object, such as belt buckle or necklace coming into contact with the electrode pads during stimulation.
7. Do not use this unit to treat one region for pain relief longer than 30 minutes.

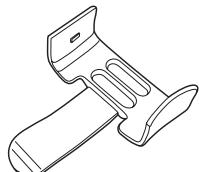
• *Names of Components*



• Lead wires
(Color-coded lead wires--blue for channel 1 & green for channel 2)



• Electrode pads (4.5x4.5cm)



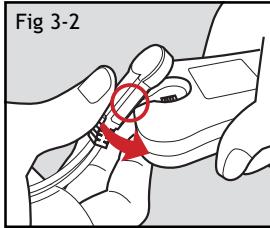
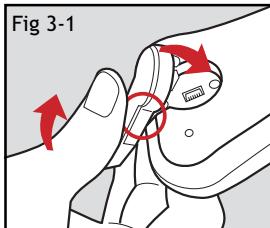
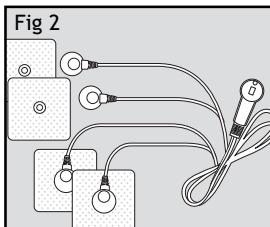
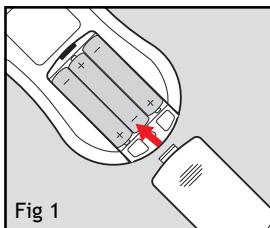
• Belt clip

LCD Display Icons	Description	Remark
1	Indicating stimulating modes	
2	Intensity indicator icon The more the shade, the stronger the intensity	
3	88 The numbers display correspondently while selecting programs or setting up cycles	
4	■■	Only appears when battery is low
5	88 min. The number indicates total treatment time while users setting it. During stimulation, the number shown in this section indicates the remaining time.	
6	▼▲	This icon is displayed and animated when pads are disconnected from wires during stimulation.
7	888 While setting up the device, it indicates the frequency of the first cycle While HD2 is stimulating it indicates the frequency of current running cycle	
Function Keys	Function	Remark
8	Power on/off, Start/Stop Stimulation	Press to power on and 3 seconds to power off.
9	► MENU	Mode/Program selection/ Go back to previous menu layer
10	ENTER ◀	Confirms Mode/Program/Treatment time
11	UP ▲	Increase Pulse rate (Hz)/Treatment time, Program selection
12	▼ DOWN	Decrease Pulse rate (Hz)/Treatment time, Program selection
13	CH1+ CH1- CH2- CH2+	Increase/Decrease correspondent channels intensity During stimulation, press DOWN to decrease intensity levels of both channels together

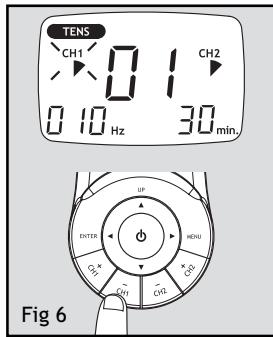
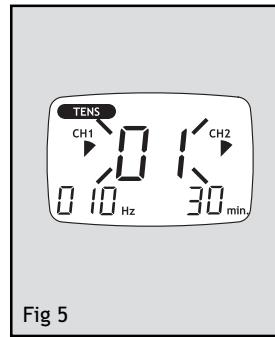
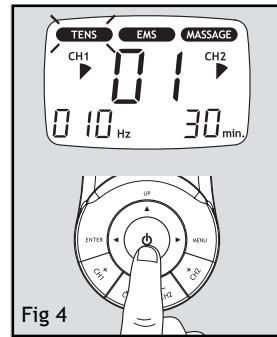
* Intensity level could only be adjusted while HD2 stimulating

* A short beep is sounded when a valid key is pressed; two short beeps are sounded when an invalid key is accessed.

1. Press and slide away the battery cover on the back of HD2. Insert batteries with correct polarity positions; close back the battery cover. (Fig 1)
2. Place the electrode pads properly on the target area and connect the color-coded leadwires to electrodes. (Fig 2) You may want to refer to pad position illustrations on page I & II.
3. Refer to Fig 3-1 to connect the plug and socket. (To disconnect, refer to Fig 3-2 to snap it out.)
4. Refer to the stimulation program charts beginning page III and find a desirable TENS program according to your need.

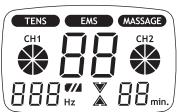


5. Hold down $\textcircled{b}/\textcircled{h}$ for 3 seconds to turn on HD 2. (Fig 4)
6. Press MENU repeatedly to move the LCD submenu indicator to TENS (flashing when selected) and press ENTER to confirm. (Fig 4)
7. Press $\blacktriangle/\blacktriangledown$ to select the preferred TENS program from program #1 and #18 and confirm it by pressing ENTER. (Fig 5)
8. Press $\textcircled{b}/\textcircled{h}$ to begin treatment and stimulation.
9. Access the pulse strength keys CH1+, CH1-, CH2+, and CH2- to adjust the stimulation intensity levels per channel. (Fig 6)
10. Pause the treatment stimulation anytime by pressing $\textcircled{b}/\textcircled{h}$. Press $\textcircled{b}/\textcircled{h}$ again to resume treatment.



GB 4. Operation Procedures

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1. Hold down the \odot/\parallel key until the iSlim HD 2 is turned on.
2. Press MENU to select a submenu of TENS, EMS, or MASSAGE, followed with confirmation by ENTER.

TENS, EMS & MASSAGE

There are 20 programs in TENS & EMS submenu, and 10 in MASSAGE. You can adjust program operation time and pulse strength for each channel individually. Further, TENS & EMS programs 11~20 are also adjustable in terms of pulse rate (HZ). Please refer to charts TENS (page III1-2) and EMS (page III-3) for parameter setting and suggested applications.

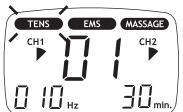


Fig 1

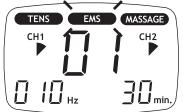


Fig 2

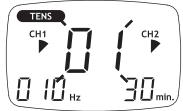


Fig 3

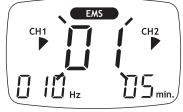


Fig 4



Fig 5

* Advanced operation for TENS/EMS programs 11~20

1. After press ENTER to confirm TENS/EMS program 11~20, pulse rate (HZ) setting flashes while C1 is displayed. (Fig. 7)
2. Setup desired pulse rate using $\blacktriangle/\blacktriangledown$ then press ENTER to confirm and move to the next cycle setting. (to end setting total number of cycle, set pulse rate HZ to 0)
3. To setup/change total treatment time using $\blacktriangle/\blacktriangledown$ (Fig. 8) to setup desired treatment time then press ENTER to confirm
4. Press \odot/\parallel to start stimulation

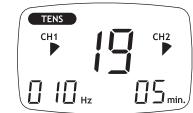


Fig 6

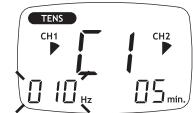


Fig 7

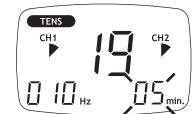


Fig 8

**Note 1: When the Hz of a cycle is set as "0", all the Hz settings for the later cycles will move up by one cycle.

***Note 2: When the skin-pad detection goes off, treatment stimulation will be paused. Also at the same time, there will be audio and visual signals at presence. Check immediately if (1) the lead wire is properly connected to the device body, (2) electrode pads are connected to the lead-wires, and (3) electrodes are attached properly on the skin. For more info, please refer to Section 5 Maintenance & Troubleshooting.

Restore Factory Presets

Be cautioned that saved data will be restored to factory settings without any prompting.

1. Turn off the device by pressing and holding O/II .
2. Open battery cover and remove the battery in the middle.
3. Press and hold the O/II key and the ▲ key simultaneously while reinstalling the battery.
4. Keep holding the two keys after the battery is reinstalled until a long beep sounded. (approximately in 10 seconds)
5. Close the battery cover afterwards.

1. Storage of the HD2 unit

- (1) Keep the unit away from children.
- (2) Remove the batteries if the unit will not be used for more than 10 days.
- (3) Disconnect lead wires and electrode pads after each use.
- (4) Reapply the protective film back to the electrode pad after each use.
- (5) Do not store the unit under high temperature, high humidity, direct sunlight exposed environment or where there are a lot of dusts or corrosive gas.

2. Care for the electrode pads

- (1) Clean the sticky surface of the electrode pads with a damp, lint-free cloth if it gets dirty or less sticky.
- (2) Always store the electrode pads in a cool, airy area away from direct sun light.
- (3) Be sure the skin is clean before the electrode pads are placed.
- (4) Always store the electrode pads with the protective film inside the provided zip polybag.

3. Care for the lead wires

- (1) Avoid bending or pulling the lead wires.
- (2) Snapping out the lead wire buttons from the electrode pads by holding the buttons, not the wire.
- (3) Do not connect the lead wires to snap-on electrode pads other than those supplied.
- (4) Disconnect the lead wires from the electrode pads after each use.

4. Cleaning for the HD 2 unit

- (1) Remove the battery from the battery bay and unplug the lead wires when you clean.
- (2) Wipe off the smudge spots with a damp cloth (absorbed with lukewarm, soapy water if necessary).
- (3) Make sure there is no water seeping into the unit.
- (4) Always keep the plug and socket dry when cleaning.
- (5) Alcohol based cleaning agents or any abrasive cleaning agents are NOT recommended.

5. How to lengthen the life cycle of the lead-wire plug and socket?

- (1) Be sure to connect and disconnect the plug and socket according to directions stated on page 6.
- (2) Do not twist the plug when it is connected to the socket.
- (3) Make sure there is no objects stuck in the socket before connecting the plug
- (4) Never poke the aligned metal wires on the socket or plug

Disposal

Batteries and this unit must NOT be disposed in household waste. Return them to public collection points or shops selling batteries or devices of the same kind according to local regulations. In case of any confusion, consult with your local environmental protection agency.

1. The units fails to turn on.

- (1) Press the  key again and hold it down for 3 seconds.
- (2) Check if the batteries are properly in place with good connection.
- (3) Replace batteries if there is no improvement after (1) and (2) both fail.

2. The electrode pads are not sticky as before.

Clean the sticky surface with a damp, lint-free cloth; let them air dry and try them on. If they still do not attach firmly, replace with new pads.

3. The unit beeps abnormally during treatment.

- (1) Pause the program by pressing  . Check if lead wires are connected securely with the pads. Check if the pads are attached firmly on the treated area.
- (2) If the beeping persists, replace the batteries with new ones.

4. The stimulation is not felt.

- (1) If there is a warning beeping sound, follow procedures above.
- (2) Press  again to restart the program.
- (3) Make sure electrode pads are not overlapped.
- (4) Increase the pulse intensity gradually.
- (5) Pause the program and make sure the lead wire plug is connected firmly in the socket.

5. The skin of treated area turns red.

Stop treating that area immediately; wait until the skin restores to its healthy state. If irritation persists, consult with a dermatologist.

6. The battery icon begin to flash.

Continue to use the unit until the battery icon is the only item remaining on the LCD screen; then replace the batteries.

7. The LCD displays are not clear or even broken.

Turn off the unit and replace batteries for further checking. If not improving, send the unit to local dealers for further checking for electronic malfunction.

8. The lead wire plug are not firmly connected to the socket.

Remove the plug according to directions on page 6; check if there are any foreign objects stuck in the plug or socket. If the plug is broken, check with the store where you bought the unit for replacing the lead wires.

9. The stimulation is uncomfortable.

- (1) Press  to decrease intensity if the stimulation is too strong.
- (2) If not improving, press  to pause the treatment. Check if the electrode pads are placed properly according to recommended illustrations on page II and III. Make adjustment if necessary.
- (3) If (2) does not help, check if the electrode pads are worn out. Worn pads can not distribute current evenly across the skin, which may lead to irritating stimulation. In such a case, replace the electrode pads.

10. The belt clip can not hold tightly the unit in position.

- (1) Make sure the unit is held at the right position with the belt clip.
- (2) Check the belt material and size; some belts work better with the supplied belt clip than others.

MEMORY Table

Prog \ Cycle	1	2	3	4	5	6	7	8
1	Hz							
2	Hz							
3	Hz							
4	Hz							
5	Hz							
6	Hz							
7	Hz							
8	Hz							
9	Hz							
10	Hz							

(WARNING: If you are INEXPERIENCED with advanced TENS/EMS devices, consulting with a professional therapist is recommended for program parameter adjustments.

Prog \ Cycle	1	2	3	4	5	6	7	8
1	Hz							
2	Hz							
3	Hz							
4	Hz							
5	Hz							
6	Hz							
7	Hz							
8	Hz							
9	Hz							
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3	Hz							
4	Hz							
5	Hz							
6	Hz							
7	Hz							
8	Hz							
9	Hz							
10	Hz							

GB Product Specifications

Power	AAA battery x 3
Pulse rate	1 ~ 120 Hz
Pulse width	40-250 μ S
Output voltage	Max. 90 Vpp, based on 500 Ohm load +-10%
Treatment time	5 ~ 90 minutes, 5 minutes per interval
Pulse strength	0 ~ 15 stages adjustable
Operation environment	10 ~ 40°C, 30 ~ 85% RH
Storage environment	-10 ~ 50°C, 10 ~ 95% RH
Transport environment	-10 ~ 50°C, 35 ~ 85% RH
Size	130 x 70 x 28 mm

Applicable Electrical Range for the Electrode Pads

Pulse rate	1-150 Hz
Pulse strength	1-150 V
Pulse width	100 μ S ~ 500 mS



Type BF AP

Note: This device complies with the electromagnetic compatibility requirement of EN 60601-1-2 as specified in EEC Directive 93/42/EEC.

**** Don't try to repair the device. There are no user serviceable parts inside.*

**** Always use the specified accessories in the manual. The use of other parts not approved by the manufacturer may be hazardous.*

TAIWAN

HIVOX BIOTEK INC.

8F, No.98, Shingde Rd.,
Sanchong City, Taipei Hsien 241,
Taiwan



www.hivox-biotek.com



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